

Work Order ID 84830

84830

Page 1

May-24-12 7:55:22 AM

Item ID: D206-642-241

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Replacement Skidtube

Start Date: 24/05/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 07/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/05/20 Tooling:

Date:

Run Start *NR1*

QC:

Date: 12/05/20 SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2650	Rev F								

100

0.00

100

DOCUMENT CONTROL

DC

0.00

Memo

Document Control

Photocopy bluefile & type labels per PPP D206-642-241

CHG005

84830

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

110

0.00

110

Skidtubes

0.00

Skidtubes

Memo

1-Deburr Fwd edge of tube

2- Remove ridge on inside of Fwd edge of tube as per Dwg D2650

3-Weld Fwd Cap as per Dwg D2650. Use aluminum rod. Grind D2647 to fit as required.

Pick:

Qty Part Number Description Batch

A/R Aluminum Rod *MB0164*

4-Grind weld flush to cap on top surface only.

5-Cut Aft end as per dwg 2650 from front of tube and Deburr

6-Remove inner indexing ridge on Aft end of skidtube as per Dwg D2650

7-Open holes for Aft end cap as per Dwg D2650 with #30 Drill Bit using DT8025.

8-Drill pilot holes using Dt 8167.

9-Locate DT8732 from inner Aft saddle hole & 3rd crossbolt hole. Insert D3286-1 doubler using DT8732 & D206-642-241-T1, then locating doubler off of 3/16" holes, cleco DT8732 & doubler leaving DT8732 for added support.

10- Drill D3286-1 doubler rivet holes in tube using # 30 drill, spot drilling doubler at the same time.

> SAD 12-06-07 ①

> CF 12-6-20

> SAD 12-06-22

Dart Aerospace Ltd

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11-Working from the center out, drill # 30 holes into D3286-1 doubler. Cleco each hole as it is being drilled. Verify angle of holes to accommodate rivet heads.

12-Remove 3/16" cleco's only and open GHW holes to Ø0.500" as per Dwg D2650

13-Remove D3286-1 doublers, identify orientation, deburr, then attach them to the workorder

14-Remove indexing edge using DT8741 as per Dwg D2650

15-C'sink GHW rivet holes as per Dwg D2650

SAD 12:06:22

120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

12 06 24

Dart Aerospace Ltd

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Skidtubes	0.00							
130									
Skidtubes	Memo	0.00							
Skidtubes	1-Open crossbolt holes to Ø0.3125"								
	2-Drill pilot holes using DT8028-3, then open to Ø0.297" as per Drawing 12-6-25								
	Open Aft cap hole #6								
	3-Deburr tube and blow out chips from inside the tube								
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	QC7-Inspect Chemical Conversion Coat	0.00							
150									
QC	Memo	0.00							
Quality Control									

[Handwritten signature]

12-6-25
CF

1 12-6-25

① SAI 12-06-25

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Start Date: 24/05/2012 **Start Qty:** 1.00

*** 1 ***

Cust Item ID:

Required Date: 07/06/2012 **Req'd Qty:** 1.00

*** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160

0.00

160

Skidtubes

0.00

Skidtubes

Memo

Skidtubes

~~1~~-Open holes to finished size as per Dwg D2650, D2650-3 Drilling Detail
(without cutting fluid)

~~Z~~-C'sink crossbolt spacer holes as per Dwg D2650(without cutting fluid)

24 Debur and blow out all chips from inside the tube

170

QC6- Inspect dimensions to drawing

0.00

170

QC

Memo

0.00

Quality Control

1 ~~0~~ CF 12-6-25

h Ø BF12-06-20

W/O:		WORK ORDER CHANGES					
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1

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1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

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Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

0.00

180

Skidtubes

0.00

Skidtubes

Memo

1-Locate, install and rivet doublers as per Dwg D2650. Micro-shave rivets as required

SAD 12-06-26 ①

2-Bond D2654-3 web in place as per QSI 015. Ensure holes line up. Allow 12 Hrs. cure time before cutting

Start Date: 12-06-27 Time: 5:00
Finish Date: 12-07-03 Time: 9:00

SAD 12-06-27

Pick:

Qty Part Number Description Batch

A/RSikaflex-291 M121409

Sikaflex expire date: 13-04-12

190

QC5- Inspect part completeness to step on W/O

0.00

190

QC

Memo

0.00

Quality Control

1 0 BE12-07-03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Item ID: D206-642-241

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N9000040100

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Start Date: 24/05/2012 Start Qty: 1.00

1

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Required Date: 07/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start *NR1*

QC: Date: SPC (Y/N): Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

200

Skidtubes

0.00

Skidtubes

Memo

1-remove alodine from around hole and prepare for welding

BE 12/07/03

2-Prep per QSI 005 and Insert D2649 crossbolt spacers. Weld as per QSI 004 and Dwg D2650. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.

Pick:

QtyPart NumberDescriptionBatch
A/RAluminum Rod m120164

BE 12/07/03

3-Grind welds flush as per Dwg D2650.

BE 12/07/03

4-Using DT8733, insert (2) D3286-3 spacers as per QSI 004 and Dwg D2650. Remember to back drill each hole to Ø0.402" before welding other side. Use SS rod as required.

A/RSS Rod NONE BE 12/07/03

5-Counterbore 5/16" x 0.750" deep except 7th hole from Aft end as per Dwg D2650. Deburr

DP 12-7-11

W/O:		WORK ORDER CHANGES					
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1

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	HandFinishing	0.00							
210	HandFinish	0.00							
Hand Finishing	Memo Install D2680-041 Nut Plate as per Dwg D2650								
220	QC10- Inspect visual per QSI004- ground welds	0.00							
220	QC	0.00							
Quality Control	Memo								
230	QC5- Inspect part completeness to step on W/O	0.00							
230	QC	0.00							
Quality Control	Memo								

DP 12-7-11

PC 12.7.12

QC 7 Memo PC 12.7.12

DAS 24

PC 12.7.12

PC 12.7.12

DAS

Dart Aerospace Ltd

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Run Start *NR1*

Stop *NR2*

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--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

240 Pressure Wash per QSI005 4.3

0.00

240

HandFinish

Memo

0.00

Hand Finishing

Brush alodine tube on crossbolt spacer area, do not acid etch, do not dip tube in tank.

1X

m/f
12/07/12

250

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

250

Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

8:00
320°F
8:30

1X

m/f
12/07/13

260

QC3- Inspct Part Finish

0.00

260

QC

Memo

0.00

Quality Control

1 X

20

14/07/16

m121841

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Dart Aerospace Ltd

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310

0.00

310

Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPP D206-664-241

Location: _____

PPP Rev: _____

320

0.00

320

QC21- Final Inspection - Work Order Release

QC

Memo

0.00

Quality Control

MF

12.07-19

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Picklist Print

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Page 1

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: 04.12.02 Revised procedural steps KJ/JLM IPP RevP: revise and update route/bom DD 10.01.06 verified by: ECIPP rev Q 10.02.19 per PAR 09-043 EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2620		Manufactured	No			110	Each	17.0000	1	1			

D2620

Skidtube, 206 Skidtube

**

SAD 12-06-07

Location	Loc Qty	Loc Code
LG	17	
79543	2	
79544	1	
81365	1	
82517	3	
82518	10	

D3286-1

Manufactured No

110 Each

BAE/06/18

77.0000

2

2

D3286-1

Doubler

**

SAD 12-06-22

Location	Loc Qty	Loc Code
LG002	189	
74872	6	
78014	7	
79556	58	
ST046	-112	
76772	6	

D2647

Manufactured No

110 Each

79.0000

1

1

D2647

Cap

**

BAE/06/18

Location	Loc Qty	Loc Code
LG002	79	
75482	3	
79563	76	

W/O:		WORK ORDER CHANGES					
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Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2654-3

Manufactured No

180

Each

2.0000

1

1

D2654-3

Web

**

SAD

12-06-27

Location

Loc Qty

Loc Code

LG

2

82106

2

CR3212-4-04

Purchased

No

180

Each

385944
4,583.000

52

52

CR3212-4-04

Cherry Rivet

**

SAD

12-06-27

Location

Loc Qty

Loc Code

ST331

116

116471

36

117816

3

118686

1

118840

16

119017

60

st510

4467

119075

4467

52

W/O:		WORK ORDER CHANGES					
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D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

200

Each

415.0000

18

18

D2649

Cross Bolt Spacer

**

BE 12/07/03
885586 *6

Location

Loc Qty

Loc Code

LG

272

77574

2

79502

8

79503

251

79564

4

79565

7

LG001

143

65317

1

68224

2

68507

11

71355

2

72704

2

72841

11

73390

8

73857

21

73858

53

73859

4

73860

4

78020

6

78583

2

79566

16

D3286-3

Manufactured No

200

Each

62.0000

2

2

D3286-3

Spacer

**

BE 12/07/03

Location

Loc Qty

Loc Code

LG

40

81975

40

LG001

22

74117

1

79557

21

May-24-12 7:55:26 AM

Shop Packet Print

67

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-24-12 7:55:26 AM

Page 4

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2680-041

Manufactured No

210 Each

87.0000 1 1

D2680-041

Nut Plate

**

DD 12-7-11

Location

Loc Qty

Loc Code

ST013

87

78016

87

CR3212-4-03

Purchased No

210 Each

1,278.000 2

CR3212-4-03

Cherry Rivet

**

DD 12-7-11

Location

Loc Qty

Loc Code

FP002

350

114859

350

ST331

928

110139

2

119017

926

CCR264SS3-3

Purchased No

210 Each

364.0000 2

CCR264SS3-3

Cherry Rivet

**

2 2

DD 12-7-11

Location

Loc Qty

Loc Code

ST331

364

113973

2

117849

81

119017

281

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-24-12 7:55:26 AM

Page 5

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

32.0000

1

1

D2646

Aft Cap

**

1

(2P)

12/07/16

Location

Loc Qty

Loc Code

FP002	85443✓	32
62678		5
68280		5
70945		1
71070		2
73294		1
73825		2
78018		4
79562		12

D2651-1

Manufactured No

270

Each

439.0000

18

18

D2651-1

Plug

**

18

(2P)

12/07/16

Location

Loc Qty

Loc Code

FP		200
FP001	85456✓	425
57869		1
66445		10
69018		2
70827		2
70839		8
71037		8
77559		30
78584		18
79234		46
FP-A		-186
77559		1
78124		5
81954		108
82573		200

May-24-12 7:55:27 AM

Shop Packet Print

Page 5

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-24-12 7:55:27 AM

Page 6

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN960JD416 ☒ NAS1149D0463L ☒ Purchased

No

270

Each

30.0000

1

1

AN960JD416

Washer

**

1

OP

12/07/16

Location

Loc Qty

Loc Code

ST351

121912 ✓

30

116289

10

119097

20

D2651-3

Manufactured

No

270

Each

1,246.000

18

18

D2651-3

O-Ring

**

18

OP

12/07/16

Location

Loc Qty

Loc Code

FP001

16

61962

12

73828

4

FP-A

1230

78126 ✓

1230

MS27039-1-08

Purchased

No

270

Each

1,733.000

46

46

MS27039-1-08

Screw

**

46

OP

12/07/16

Location

Loc Qty

Loc Code

ST291

1733

117423

81

119075

1

120308 ✓

594

121011

57

121243

500

121708

500

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-24-12 7:55:27 AM

Page 7

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

270

Each

3,051.000

44

44

AI S4-1032-130

Insert

**

44

(20)

12/07/16

Location

Loc Qty

Loc Code

ST280

121474 ✓

205

119084

116

120671

89

ST281

124

120807

36

120837

88

ST282

2722

121269

2722

MS27039-4-06

Purchased

No

270

Each

131.0000

1

1

MS27039-4-06

Screw

**

1

(20)

12/07/16

Location

Loc Qty

Loc Code

ST292

131

119075 ✓

131

AN960ID10L

*NAS1149D03321

Purchased

No

270

Each

0.0000

46

46

***AN960.ID10I ***

Washer

**

46

(20)

12/07/16

121011 ✓

May-24-12 7:55:27 AM

Shop Packet Print

Page 7

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-24-12 7:55:27 AM

Page 8

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3537-1 Manufactured No

270 Each

79.0000 4 4

D3537-1

Wearpad

**

4

DP

12/07/16

Location

Loc Qty

Loc Code

FG

10

79833

10

FP002

69

69817

5

81360

38

81362

22

83254

1

83255

3

D3537-3 Manufactured No

270 Each

24.0000 1 1

D3537-3

Wearpad

**

1

DP

12/07/16

Location

Loc Qty

Loc Code

FP002

24

78836

3

81363

21

D3535-13 Manufactured No

270 Each

20.0000 1 1

D3535-13

Wearshoe

**

1

DP

12/07/16

Location

Loc Qty

Loc Code

FP001

20

78962

2

79850

1

80327

5

81353

12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-24-12 7:55:27 AM

Page 9

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-13

Manufactured No

270 Each

29.0000 1 1

D3536-13

Gasket

**

1 DP 12/07/16



Location

Loc Qty

Loc Code

FP002

81344 ✓

29

78964

5

81344

24

D3535-21

Manufactured No

270 Each

17.0000 1 1

D3535-21

Wearshoe

**

1 DP 12/07/16

Location

Loc Qty

Loc Code

FP001

6

80329

6

FP002

78987 ✓

11

11

D3536-21

Manufactured No

270 Each

27.0000 1 1

D3536-21

Gasket

**

1 DP 12/07/16

Location

Loc Qty

Loc Code

FP

11

83433 ✓

11

FP002

78966 ~~78966~~

16

16

D3535-33

Manufactured No

270 Each

28.0000 1 1

D3535-33

Wearshoe

**

1 DP 12/07/16

Location

Loc Qty

Loc Code

FP001

28

70462

1

78984

15

82751 ✓

12

May-24-12 7:55:27 AM

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Page 9

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-24-12 7:55:27 AM

Work Order ID: 84830

84830

Parent Item: D206-642-241

D206-642-241

Parent Item Name: Replacement Skidtube

Start Date: 24/05/2012

Required Date: 07/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-33

Manufactured No

270

Each

21.0000

1

1

D3536-33

Gasket

**

1

2P

12/07/16

Location

Loc Qty

Loc Code

FP002

21

70465

8

81341 ✓

13

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -1	QTY -3	QTY -5	QTY -7	PART NUMBER	DESCRIPTION
X				D2650-1	SKIDTUBE ASSEMBLY
	X			D2650-3	SKIDTUBE ASSEMBLY
		X		D2650-5	SKIDTUBE ASSEMBLY
			X	D2650-7	SKIDTUBE ASSEMBLY
1	1	1	1	D2600-1-160	EXTRUSION
1				D2654-1	WEB
	1			D2654-3	WEB
		1		D2654-5	WEB
			1	D2654-7	WEB
1	1	1	1	D2646	AFT CAP
1	1	1	1	D2647	CAP
17	18	19	23	D2649	CROSS BOLT SPACER
16	18	14	22	D2651-1	PLUG
16	18	14	22	D2651-3	O-RING
1	1	1	1	D2680-041	NUT PLATE
2	2			D3286-1	DOUBLER
2	2			D3286-3	STUD
42	44	54	60	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, ALS7-1032-130)
2	2	2	2	AN960JD10L	WASHER
2	2	2	2	CCR264SS3-3	RIVET
2	2	2	2	CR3212-4-03	RIVET
2	2	2	2	MS27039-1-08	SCREW
1	1	1	1	MS27039-4-06	SCREW
1	1	1	1	AN960JD416	WASHER
52	52			CR3212-4-04	RIVET

F

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 84830 MLJ
12/05/28

RELEASED
08-07-23/17

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
-BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 11) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)
- 12) DRILL Ø0.297 FOR ALS7-1032-130 INSERTS USING TEMPLATE DT8056-1 ON -1 TUBE, DT8056-3 ON -3 TUBE, DT8056-5 ON -5 TUBE, AND DT8056-7 ON -7 TUBE. INSTALL INSERTS AFTER FINISH.
- 13) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

F	DRAWING UPDATED TO CURRENT STANDARDS. SHT 6 ADDED. ALL SECTION AND DETAIL VIEWS TRANSFERRED TO SHT 6. SHT 1 IN PL PART D2649 QTY UPDATED. SHT 6 SECT C-C GRIND INSTRUCTIONS DELETED FROM NOTE 7 (SEE NCR 239).	AJS	08.08.08
E	RMOVE CBORE, CHG DRILL, ADD CHAMFER	CP	06.03.30
D	REDRAW; INCCRP. DE09136/9153/9163 MOD GROUND HANDLING ON D2650-1/-3	CP	04.05.17
C	CHANGE HOLE PATTERN AND FRONT END	DS	97.10.29
B	AS MANUFACTURED CHANGES	DS	97.06.26
A	NEW ISSUE	DS	97.03.25
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 1 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC	

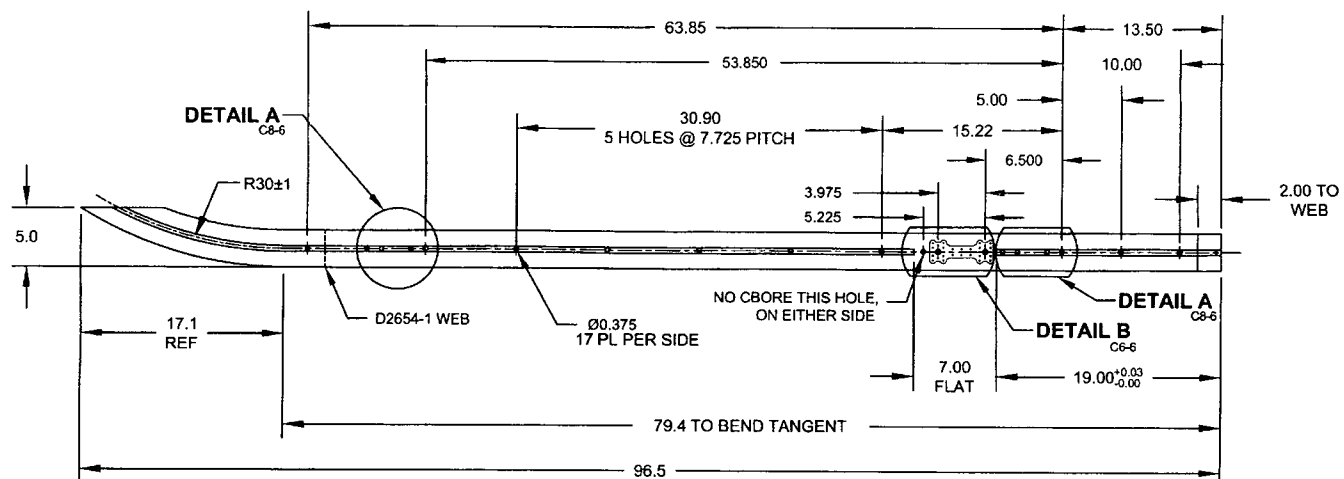
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

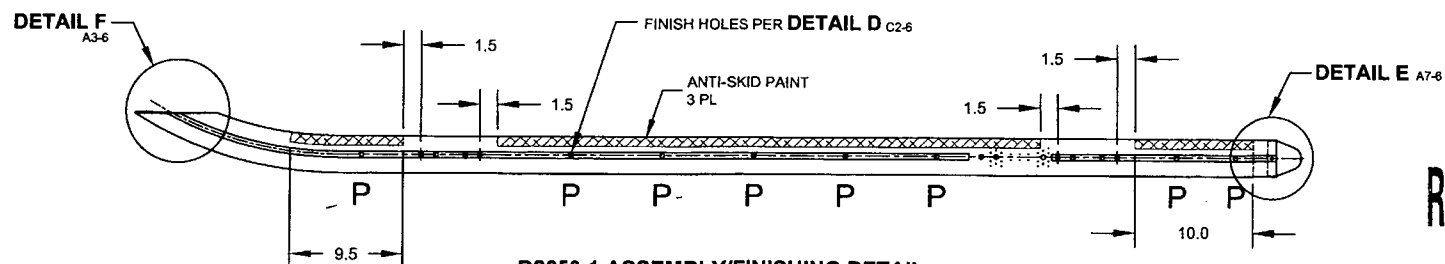
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			



NOTE: Date & initial all entries



D2650-1 BENDING/DRILLING DETAIL



D2650-1 ASSEMBLY/FINISHING DETAIL

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 2 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			

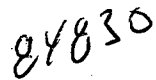
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



The technical drawing illustrates a handrail assembly. The main view shows a side elevation of a curved handrail with a diameter of 1.5 inches. The rail is supported by a base plate with a total length of 15.5 inches. The base plate features five vertical supports, each with a width of 1.5 inches. The rail is finished with anti-skid paint (3 PL) and has finish holes per Detail D C2-6. The ends of the rail are detailed as follows:

- DETAIL F A3-6**: The left end of the rail, showing a circular cross-section.
- DETAIL E A7-6**: The right end of the rail, showing a circular cross-section.

A section line labeled "RE" is shown at the bottom right of the drawing.

D2650-3 ASSEMBLY/FINISHING DETAIL

RELEASE
08 07 22 118

DESIGN	DS	DART AEROSPACE USA, INC.	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.	<i>[Signature]</i>	D2650	SHEET 3 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206/407 SKIDTOE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

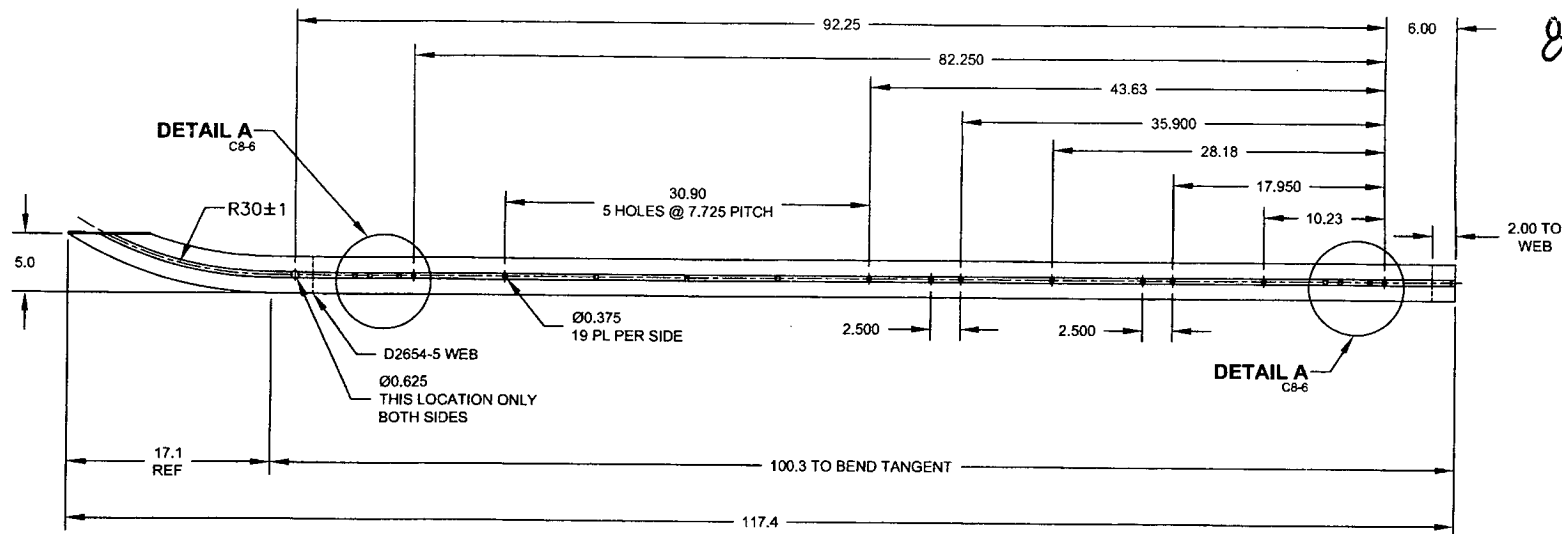
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

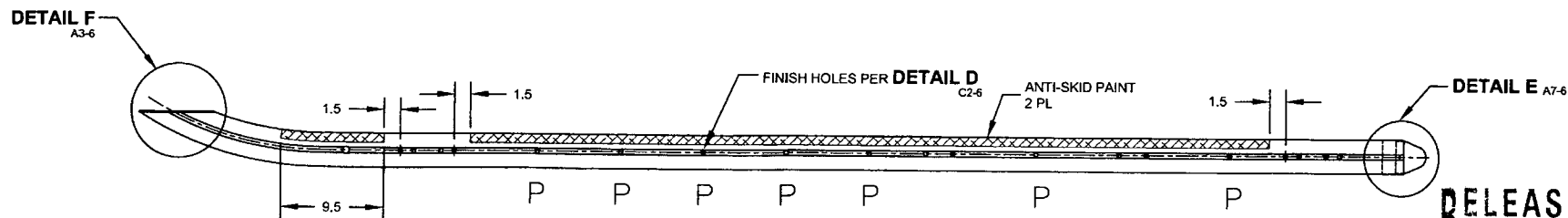
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2650-5 BENDING/DRILLING DETAIL



D2650-5 ASSEMBLY/FINISHING DETAIL

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	A/S	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 4 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	<small>COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRELIMINARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

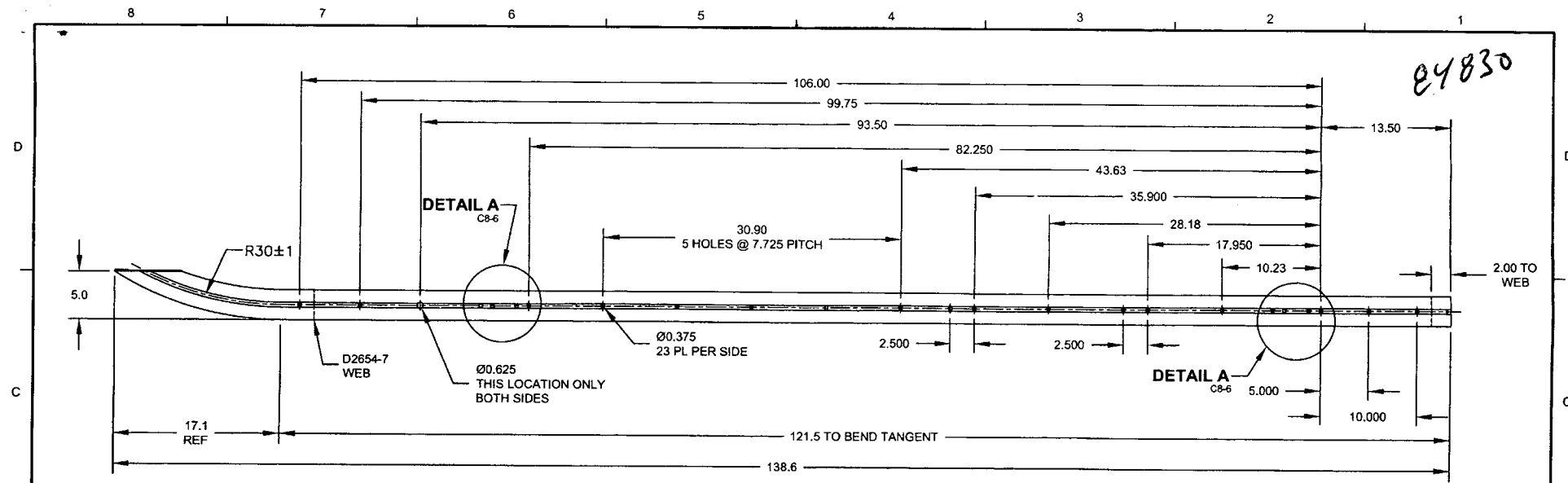
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

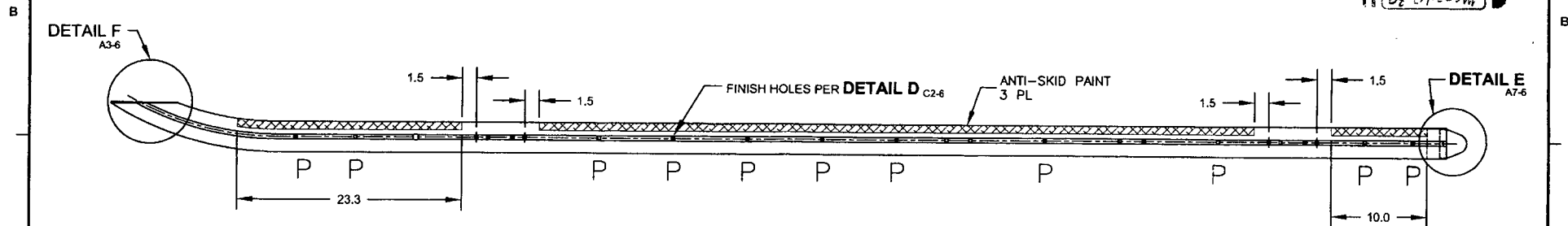
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2650-7 BENDING/DRILL DETAIL



D2650-7 ASSEMBLY/FINISHING DETAIL

RELEASED
08/07/22

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 5 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	<small>COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

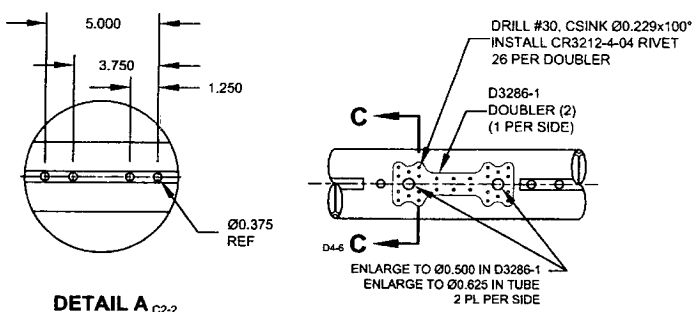
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

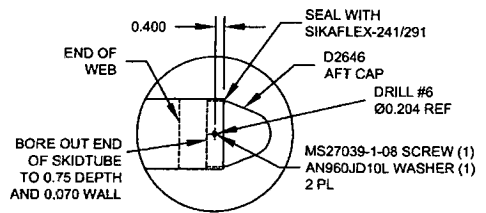
NOTE: Date & initial all entries

24830



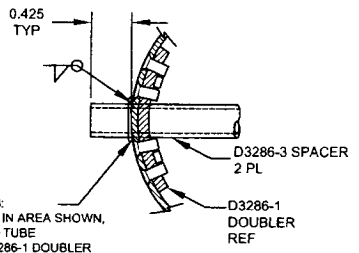
DETAIL A
SCALE 2X
C2-2
D7-2
C2-3
D7-3
C2-4
D7-4
C2-5
D6-5

DETAIL B
SCALE 2X
C3-2
C3-3



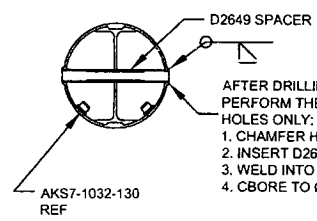
DETAIL E
SCALE 2X
B2-2
B2-3
B1-4
B1-5

SECTION C-C C7-6
SCALE NONE

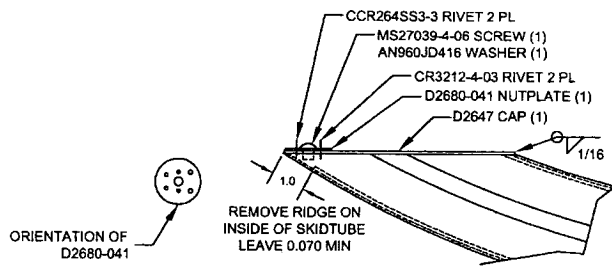


- TO INSTALL D3286-1/3:
1. GRIND OFF FLANGE IN AREA SHOWN, FLUSH WITH ROUND TUBE
 2. LOCATE & DRILL D3286-1 DOUBLER USING DT3286-1T1
 3. ENLARGE HOLES IN D3286-1 TO Ø0.500
 4. ENLARGE HOLES IN TUBE TO Ø0.625 AND CHAMFER HOLE 0.030x45°
 5. RIVET D3286-1 TO TUBE
 6. INSERT D3286-3 SPACER
 7. WELD IN PLACE.

F



DETAIL D
FOR Ø0.375 HOLES ONLY
SCALE 3X
B4-2
B4-3
B4-4
B4-5







DETAIL F
SCALE NONE
B8-2
B8-3
B8-4
B8-5

DETAIL F NOTES:

1. CUT TUBE LEVEL
 2. REMOVE RIDGE ON FWD SIDE
 3. LOCATE D2647 (TRIM AS NECESSARY)
 4. WELD D2647 IN PLACE PER DART QSI 004
 5. GRIND FLUSH
 6. RIVET D2680-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D2680-041 PRIOR TO FINISH

RELEASED
08 09 27 13

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 6 OF 6
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 297

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job #: 80951
Part #: A206-642-151
Description: Skid tube
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[<input checked="" type="checkbox"/>]	fail[]
Incomplete Penetration:	pass[<input checked="" type="checkbox"/>]	fail[]
Incomplete Fusion:	pass[<input checked="" type="checkbox"/>]	fail[]
Cracks:	pass[<input checked="" type="checkbox"/>]	fail[]
Overlap (cold lap)	pass[<input checked="" type="checkbox"/>]	fail[]
Undercut:	pass[<input checked="" type="checkbox"/>]	fail[]
Pin holes:	pass[<input checked="" type="checkbox"/>]	fail[]
Porosity (surface):	pass[<input checked="" type="checkbox"/>]	fail[]
Coloration:	pass[<input checked="" type="checkbox"/>]	fail[]
Burn through:	pass[<input checked="" type="checkbox"/>]	fail[]

Qualifier [Signature] Date of Test Coupon 12.06.13

Welder [Signature] Date of Test Coupon 12.06.13

The above named individual is qualified in accordance with AWS D17.1.2001 to weld